ASL

Australian Society for Limnology Inc.

NEWSLETTER

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AUSTRALIAN SOCIETY FOR LIMNOLOGY INC.

The Australian Society for Limnology Inc. (ASL) is an Australian-based scientific society whose focus is the study and management of inland waters. The ASL was established in 1961, and has a current membership of over 650 researchers, managers, engineers, teachers and tertiary level students from all states and territories. Members have a strong professional interest in inland aquatic issues, including the maintenance of biodiversity, the maintenance and/or restoration of water quality, and the wise use of aquatic resources. The Society also has a strong interest in fostering the scientific and intellectual development of tertiary students.

The Society includes members working in government agencies, tertiary institutions and many industries related to aquatic resources. Through their daily activities, members have contact with local communities and are in a sound position to interpret and advise on inland water issues. The Society has a substantial knowledge base, and has assumed a responsibility to ensure that this is available to those who manage inland waters.

Accordingly, the charter of the ASL is to further our understanding of Australia's inland waters and to promote their wise use and sustainable management. In this manner we will contribute to the continued existence of this valued resource and the maintenance and enhancement of the quality of life for all Australians. The ASL regularly produces a newsletter with notes on limnological activities, articles of interest, book reviews and announcements of upcoming events likely to be of interest to Members.

ASL Home Page - http://www.asl.org.au/

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PRESIDENT'S REPORT

Vale Peter Cullen AO FTSE. We were saddened by the recent passing of leading water scientist Professor Peter Cullen. Peter was responsible for the creation of the CRC for Freshwater Ecology and, as its Director, played a lead role in raising awareness of the importance of science (and ecology in particular) in the management of Australia's freshwater ecosystems. His significant contributions to Australian Limnology were formally acknowledged in 1988 when he received the Society's medal (then the Jolly Award). As a founding member of the Wentworth Group of Concerned Scientists, he was extremely successful in convincing policy makers in Federal and State governments of the need for ecologically sustainable management of Australia's waterways and of the urgent need to act to prevent further degradation. The $9 billion rescue package for the Murray-Darling River is testament to his influence. Through his roles as a Director of Land and Water Australia and as a National Water Commissioner he also played an influential role in guiding science investments in the water sciences. Peter was passionate about Australia's rivers and increasingly outspoken about the need for governments to do more to protect them - and of the need for scientists to do more to inform public debate. His extraordinary skills as an advocate for good science and as a facilitator of numerous debates about water - and his dry sense of humour - will be sorely missed.

Some of you may have recently been contacted by Sabine Schreiber about the status of your membership. We would encourage everyone to check to make sure your contact details on the ASL website are up to date and that your membership status is current. Please also encourage your students and colleagues to join the Society. You will notice that the Society's Newsletter is now available only to members on the website and requires your username and password. Our aim is to make more use of our website for the Society's news and business (one of the advantages of being a current member). We are also in the process of updating the information on the website so please let us know if you find things on there that need updating or correcting.

Planning is underway for the 2008 ASL Meeting in Mandurah so please mark the dates in your calendar (see details in the Newsletter). Following our discussions at the AGM last year, we are planning to host a student workshop immediately before the conference. Students should contact Rebecca McIntyre (UWA) if you are interested in assisting with the planning of this event.

Stuart Bunn April 2008

EDITOR'S NOTE

Well folks it seems only fair to begin with an apology for the timing of this newsletter. There are many issues which are behind that ... it's a fun story that can be extricated from me by rigorous application of expensive Scotch. Regardless of that .... my apologies.

Thank you everyone for your contributions this quarter ... most especially to Sam Lake for taking on the difficult task of paying homage to the late Professor Peter Cullen. I can't add anything to what Sam says on this most sad of losses. I was fortunate to meet Peter in the last weeks of his life, and to have him share dinner and some words of advice with me. I was struck by his ability to cut through the detail for the big picture, to realize quickly the strengths and weaknesses of any given project, and to understand the way the system works, and how we can work it. He had no tolerance for the petty arguments between scientists and very little for our fixation with our own disciplines and sub-disciplines. The problems were paramount and the solutions possible .... if we buckled down and did it. I appreciated his time and advice and am saddened that we won't be able to continue that conversation.

The next edition of the newsletter WILL appear on time, and has a deadline for submissions of **15th June 2008.**

Ross Thompson

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"I'll have the misspelled 'Ceasar' salad and the improperly hyphenated veal osso-buco."

ANNOUNCEMENTS

ASL STUDENT TRAVEL AWARDS

Applications are invited from research students for travel assistance to attend and present a paper at the Annual Congress of the Australian Society for Limnology. The purpose of this assistance is to encourage students to present the results of their work in public. Students who are carrying out research in any branch of limnology for a higher degree are encouraged to apply. The following rules apply for assistance:

1. Applicants must be full-time postgraduate students at any Australian University, College of Advanced Education or Institute of Technology. There is no age limitation. Applicants must have current financial membership of the ASL for at least 6 months.

2. Assistance will be granted on the recommendation of a panel of three appointed by the Society.

3. Applications must include a written statement of no more than 200 words describing the research, its significance and the stage that has been reached. This statement must be endorsed by the student's supervisor. An abstract of the paper that the applicant proposes to present must also be included.

4. Award of assistance will be judged on: (I) significance of the work; (ii) originality and soundness of the research; (iii) the progress made and whether the stage has been reached where something useful can be presented; (iv) ability to present a clear and concise statement of the study.

5. Applications must be lodged with Dr Richard Marchant, Museum of Victoria, 71 Victoria Crescent, Abbotsford, VIC 3067 by 25 August 2008 .

STUDENT PRIZES

At the Annual Congress, there will be three student prizes. The prizes are:
1. For the best oral presentation by a Ph.D or Masters student.
2. For the best poster presentation by a student.
3. For the best oral presentation by an Honours student.

Posters will be assessed during the dedicated poster session and must be attended by the author, who will explain the presentation and field questions. There will be no oral sessions concurrent with the poster session.

The Honours prize was felt desirable because for a number of years members have felt that recent Honours graduates are less experienced at oral presentations and are therefore disadvantaged compared with other graduate students who have nearly completed their research. We hope this prize will encourage recent Honours graduates to attend Congresses and share their results with other members of ASL.

To be eligible for a student prize, students should be current, financial members of ASL, and must give their presentation within 18 months of receiving their degree. The student prizes will be judged by a committee or committees convened by the ASL Executive at the Congress. Wherever possible, such committees will not contain supervisors or Co-authors of candidates for the prizes.

BILL WILLIAMS TRAVEL SCHOLARSHIP (BWTS)

Applications are invited from research students for financial assistance in the form of the Bill Williams Travel Scholarship (BWTS) to enable them to present a paper or poster at an overseas conference, symposium or workshop. Bill Williams was a founding member of the Australian Society for Limnology, a leading pioneer of limnological research in Australia and widely known both inside and outside the country for his advocacy of the study of inland waters. He was very conscious of the need to encourage international exchange amongst limnologists, hence the inauguration of this scholarship.

The purpose of this scholarship is to enable research students to present their work in an international forum. Students who are carrying out research in any branch of limnology for a postgraduate degree (but not an Honours degree) are eligible to apply. The following rules apply:

1. Applicants must be current postgraduate students at any Australian University or have submitted their thesis within 12 months of applying for the BWTS.

2. Applicants must have been members of the ASL for at least 12 months and have current financial membership.

3. The BWTS will be awarded by a committee consisting of the ASL President, the ASL Treasurer, and a representative of the Bill Williams Memorial Committee.

4. Applications must include a written statement (no more than one A4 page) describing the research, its significance, and the stage that has been reached. The statement must be endorsed by the student's supervisor, who should confirm that the student has reached a stage where something useful can be presented. An abstract of the paper that the applicant proposes to present must also be included, and the presentation must acknowledge the scholarship in full. A CV should be included.

5. Applicants must submit a budget indicating the various costs of their trip. This should indicate how the scholarship will be used and what other support they hope to obtain. The intention is that the scholarship will cover a substantial amount of their costs, e.g. an airfare.

6. Award of the scholarship will be judged on: (i) significance of the work; (ii) originality and soundness of the research; (iii) the progress made; (iv) ability to present a clear and concise statement of the study.

One scholarship will be awarded next financial year (2008-09). Applications should be sent to Dr R.Marchant, ASL Secretary, Museum of Victoria, GPO Box 666E, Melbourne VIC 3001 by 31 August 2008.

ASL MEDAL - CALL FOR NOMINATIONS

The Australian Society for Limnology Medal commemorates Hilary Jolly, a founding member of the Australian Society for Limnology, and is presented to a person who in the opinion of the Society, has made an outstanding contribution to Australian Limnology. The ASL Medal (formerly the Jolly Award) has become ASL's (and arguably Australia's) most prestigious prize in limnalogy, considered by members to indicate overall scientific excellence and outstanding achievement.

Any person may be nominated for the Medal, but nominations may only be made by financial members of the Society. The nomination must be in writing and must be seconded by a financial member of the Society. Naminotions must address the relevant selection criteria and a current copy of the nominee's CV should be included if deemed appropriate. Each nomination will be assessed by a Committee of the ASL.

An award is not necessarily made each year. Nominations for the Medal are accepted at any time, but nominations should be made at least three months before the annual Congress. For consideration for the 2008 Congress, the closing date for nominations is Friday 30 June 2008.

AUSRIVAS COURSE NOW ENROLLING

The AUSRIVAS Online training course is offered twice a year by the eWater CRC and the University of Canberra. The course aims to teach the skills and knowledge needed to assess river health to an acceptable standard using the Australian River Assessment System (AUSRIVAS) methods. Those who complete its requirements successfully are eligible for accreditation from the relevant state or territory agency.

There are no prerequisites for this non-award course, other than registration and payment. The theoretical knowledge required to use AUSRIVAS for river health assessment can be learnt entirely online in four interactive modules that can be completed at you own pace over 12 weeks.

A 4-day practical face-to-face workshop is offered as a fifth module, teaching the practical skills required. The workshop module is held in Canberra but **would you like us to hold a workshop in your state?** If there is sufficient demand from a group or agency we can arrange a workshop in any State or Territory.

If you would like to enroll in the course or any individual module please contact Sue Nichols at sue.nichols@canberra.edu.au for more information or queries regarding a workshop outside the ACT.

http://ausrivas.canberra.edu.au/Bioassessment/Macroinvertebrates/Training/

It is also time to enrol in Watercourses Online!!

Brush up your knowledge about the ecology of Australian river systems and how they are affected by catchment land-use and other human disturbance.

Watercourses Online is a growing set of online training courses, designed primarily to support personnel in water management, natural resources management, environmental education and ecological consulting.

The 3 courses currently offered are:

- Ecology and River Function
- Catchments: their Character, Waters & Chemical Composition
- Waterway Assessment

Find more details by following the links from http://freshwater.canberra.edu.au

PRELIMINARY ANNOUNCEMENT

REBIRTH OF TAXONOMIC WORKSHOP AT ALBURY-WODONGA

Aquatic Macroinvertebrates CERF Research Project

Date: February 10th – 11th 2009

Where:La Trobe University, Albury-Wodonga Campus Wodonga

Topics:Larval Chironomidae,
Nymphs of Coloburiscidae and taxonomic updates
The Web Guide
Interactive key to Family for adult insects

Preliminary details and registration form available at
http://www.latrobe.edu.au/deme/aw/taxonomicworkshop.htm

OBITUARY
Professor Peter Cullen

Peter Cullen was an extraordinary person as he very effectively straddled the gap between the demanding strictures in seeking scientific truth s and the difficult and diplomatic requirements in getting scientific messages to politicians, managers and the public. Messages raising an awareness of ecological issues and were calling for action. In dealing with the oft-volatile issues of water resource management and seeking ecological sustainability of freshwater ecosystems, Peter was a gifted and convincing communicator and a knowledgeable and insightful advisor. There is no doubt that Peter was a driving force in driving governmental water reforms, such as the National Water Initiative, an initiative that recognized ecological imperatives and problems along with social and economic concerns in water resource management . His advocacy over the years that the environment must be fully considered in water resource planning and management at last after many setbacks appears to be recognized and even acted upon.

Born in Melbourne he attended Balwyn High School and studied for B. AgrSc and then a M.AgrSc at the University of Melbourne. He was greatly influenced by the erudite Professor Geoffrey Leeper, as wise aphorisms of this professor were often used to great effect by Peter. After teaching at Balwyn High School, tutoring at the University of Melbourne and then working for the Port Phillip Bay Authority, in 1973 Peter went to Canberra to be a lecturer in resource management at the Canberra College of Advanced Education. Subsequently, he became a Professor in the University of Canberra and developed a very active School in Applied Ecology and Resource management, and from 1993 to 1991 he was Dean of the Faculty of Applied Science. His scientific research focused on nutrient and water quality problems (eg. eutrophication in lakes and wetlands).This work included studies with Ron Rosich on the nutrient dynamics of Lake Burley Griffin. At the same time he was advocating the need for resource managers to become ecologically aware and he was very active in assessing and solving water quality problems in freshwater systems.

In 1991 Peter almost singlehandedly put together a bid for a CRC of Freshwater Ecology. The bid was made as the world's longest blue-green algal bloom unfolded in the Darling River. However, in spite of such a vivid example of a dire water resource problem, the bid was unsuccessful. Peter then fired us up to go again and the bid was successful with environmental flows and river condition assessment being major themes. So the CRC for Freshwater Ecology was launched under Peter's Directorship with the MDFRC at Albury being the original home base. Setting up the CRC involved many meetings, many negotiations, heated discussions and flurries of fiery and amusing Faxes. Very quickly the CRC took shape and under Peter's directorship it evolved into a very effective research and educational hub for freshwater research. Not all the research was applied; basic ecology "blue sky" research was strongly supported by Peter as a critical component of the research agenda. The CRC became a source of knowledge and advice on water management and ecology.

Peter developed a versatile "knowledge broker" team producing many reports and statements, but most of all under Peter's leadership with numerous press statements,

the CRC was actively involved in the resource-ecology water debate. Indeed, as the current "drying phase" developed in southern Australia and managerial shortcomings became evident, Peter became a central figure in the water debate, actively and fluently engaging in it, being asked and providing independent and wise advice and fearlessly pointing out the sad ecological state of our rivers and wetlands (especially in the Murray-Darling system) and suggesting feasible solutions.

There were many meetings in the CRC. Under Peter's leadership many of these were stimulating affairs with questions of science and of water management being pursued along with questions of strategy and effectiveness. In the CRC and in many of its committees Peter was a diligent listener, a great distiller of relevant points and a lucid synthesizer of ideas and actions. But, it is also important to remember that Peter had a great sense of humour and of comradeship so that very rarely in my experience were there moments of acrimonious disagreement.

During the CRC time Peter worked hard to get not just freshwater ecology research noticed by politicians, but for scientific endeavours in general to recognized and built into into the political agenda. He became President of the Federation of Australian Scientific and Technological Societies (FASTS) and was an enthusiastic promoter of the Annual "Science meets Parliament" event that began in 1999. His influence in government policy relevant was strengthened when he became a member of the Prime Minister's Science, Engineering and Innovation Council in 1998 and was elected a Fellow of the Australian Academy of technological Sciences and Engineering. His strong advocacy of water issues was recognized when he was awarded the Prime Minister's Prize for Environmentalist of the year in 2001.

Peter was an active member of the Australian Society for Limnology attending many of the annual conferences from Jabiru to Queenstown NZ. Indeed, it was at the latest ASL Conference in Queenstown NZ that Peter gave a stimulating and challenging address "Adapting to water scarcity: A global challenge for the 21st century" in which he stressed the point that the research findings of freshwater ecologists are now being incorporated into water resource management, but such incorporation is still being resisted by self-interested groups. He urged "freshwater ecologists to work within the Australian Society of Limnology and develop some strategic ways forward to guide science investment in Australia" and that limnologists need to ensure that "our freshwater ecology is made accessible to Governments and our community as we confront serious water scarcity". In 2006 Peter gave an invited plenary address at the annual conference of the North American Benthological Society in Anchorage entitled "Science and politics---speaking truth to power", in which among many salient and very relevant points, he warned scientists that if they enter the public debate they need "to understand that they are leaving a world where finding the truth is the most important goal, for a world where winning is most important".

It seems that his experience with the CRC was instrumental in giving him the strength to pursue water reform in a more emphatic and determined way when he retired. In 2002 he became a founding member of the Wentworth Group of Concerned Scientists and immediately applied his energy to the collective effort of producing the controversial and influential "Blueprint for a Living Continent" in late 2002. Many disagreed with its messages, but to this day it is very obvious that the document has had a strong influence on public debate and government policy—though we still have a very long way to go to achieve any semblance of ecological sustainability in many of our ecosystems. It

is extraordinary that although his mobility was increasingly limited and he did have lingering health problems that right to the end, he was so active and dedicated to the cause of ecologically-based water reform. He was a Commissioner of the National Water Commission, Chair of the Scientific Advisory Panel of the Lake Eyre Basin Ministerial Forum, Chair of the Victorian Water Trust Advisory Council, Member of the National Heritage Trust Advisory Committee and of the International Water Academy. At the same time not only was he attending numerous meetings, but was writing and giving stimulating and goading speeches.

His ability to see the "big picture" and to not only describe the problems but to offer solutions made him a much-heeded and influential environmentalist. He urged people to think in a holistic way, the ecosystem way, to see the large scale and to identify the necessary connections that allow ecosystems to function. Peter was such an open, generous and fair-minded person that people warmed to him even if they disagreed with his views. As a scientist and as an educator he was a great encourager, eager to learn what students and fellow scientists were thinking and doing, and eager to help others in difficulties. . He will be missed as a wonderful person to have debates and discussions with and as an innervating and generous leader that motivated many from scientists, managers to fellow citizens.

In seeing the "big picture", in his dedication to the effective reform of water and catchment management and in his capacity to successfully bridge the gaps between science and resource management and policy, he will be greatly missed.

Peter is survived by his wife Vicky and by his two daughters Belinda and Michelle.

Sam Lake

MINUTES ASL EXECUTIVE TELECONFERENCE 4th April 2008

Present: S.Bunn, R.Marchant, S.Schreiber, A.Brooks, D.Baldwin, R.Thompson, S.Hardie
Apologies: M.Reid, B.Zampatti

1. ASL 2008 conference: S.Schreiber has been in contact with M.Lund, the chief organiser. A conference committee has been formed consisting of: J.Davis, J.Chambers, M.Lund, B.Sommers, L.Sim, T.Rose, B.Masters and T.Storer. One issue was whether to employ an external group to do the administration for the meeting. After some discussion it was felt that the organisers should be encouraged to employ someone (or a group) to run the conference administration using the existing ASL web site. This strategy has worked successfully for the last three meetings held in Australia. A quotation for this work should be obtained. S.Schreiber will liaise with the conference committee, which she should become a member of. She will also determine whether a deposit has been paid yet for the conference venue.
   R.Thompson offered to organise a student training workshop at the beginning of the conference with the assistance of some ASL student representatives. S.Bunn suggested sponsorship for such activity be sought from the National Water Commission. S.Schreiber reminded the executive that blank letters (on ASL letterhead) seeking external sponsorship are already available on the ASL website.
   S.Schreiber and R.Marchant will prepare notices requesting medal nominations and send these to the newsletter editor.
2. ASL website: S.Schreiber has been using the website for membership and subscription details and it appears to be working satisfactorily. Some new material is occasionally added to the site by H.Shearer, but there is clearly a lot of out of date material that needs editing. Executive members should examine the site and forward any suggested edits and other modifications to H.Shearer by April 30. R.Marchant will send a reminder to the executive about this on April 23. S.Bunn will ring or email TRI emphasising that only ASL members should be given access to society business on the web site and that no unauthorised modifications of site content should be made by TRI. The forthcoming newsletter will be uploaded to the website and will require a password for access.
3. ASL membership: S.Schreiber reported that currently there are about 460 members, of whom 200 were behind with their fees. Recently she has received payments from 40-50 of these. She has sent an excel spreadsheet to S.Bunn with a list of those long term members who have not renewed their subscriptions.
4. MFR special issue: D.Baldwin alerted the executive to the fact that a special issue of Marine and Freshwater research will be published commemorating the contributions to limnology of Peter Cullen, who recently died. The theme of this issue would be the place of science in management and those interested in contributing should get in touch with A.Boulton, the chief editor.
5. Phone hookup: the executive will hold another teleconference in July.

MEMBERS MUSINGS – Tim Doeg

YOU DON'T KNOW HOW LUCKY YOU ARE (PART I)!

You people out there in the world of PAYE don't know how lucky you are! When your computer starts to play up, you have a whole team of well-mannered, professional and efficient IT support staff to help. Just a phone call away, they will immediately understand your problem (despite your generally rather inept attempt to explain it) and do their best to fix it in a timely manner.

And when your computer starts to display the signs on imminent and terminal Alzheimer's (you know – "Error: File Not Found" or "Error: Application Not Found" – when you know it is there), a simple call and Presto a new computer turns up on your desk, ready for you to get to work without missing a beat. Sometimes, even without asking, a brand new state-of-the-art workstation simply arrives, all part of the regular well-organized upgrading of IT services you undoubtedly enjoy.

But here in the real world, us poor consultants are on our own. With more and more bloated programs to deal with (thanks, Mr. Gates), and complex memory hungry applications (say, GIS) our computer hardware rapidly becomes out of date and inefficient.

And so it was with my own computer. It got to the stage where I could cook and consume a full European breakfast, and walk the dog, by the time it managed to boot up. And every now and again, it got stroppy ("Error: Please go away, I'm tired and don't want to do this anymore") and quietly power down for a long rest.

Time for a new one. Upgrading was not an option – it already had a number of bouts of plastic surgery (various silicon implants) and the wiring (oddly called "buses") simply couldn't cope with some of the flash modern equipment. Nor would a lot of the up-to-date gizmos even fit in the poor old case. So, a new computer.

But the choice was too bewildering (all you Mac fanatics can stop reading now – I don't want all those "could have told you so" letters and e-mails). Well, after some thorough research (a scan of the Green Guide), I could have a Dual Core, or a Core 2 Duo, a 2CD E8200 or even a Core 2 Quad (which I am lead to understand is 4 cores or 2 duo cores or something). I could have 1GB+1GB RAM or 2 GB DDR2 or even a 2x1GB FBD PC2. I could have hard disks all the way up to the size of a small South American country (a 160 GB SATA sounds to me like one of those old Czechoslovakian cars).

Rather than try and put together a suitable package, there were also pre-constructed computer packages with all sorts of names – Deluxe, Superior, Supreme, Premier, Ultimate, even one called a Predator (not sure I want that on my desk)!

But they were all power packed and "just what I needed".

Well, according to the 12 year-old kid in the shop they were. Looking like he hadn't seen the sun in quite a while, he only just managed to suppress a chuckle when I showed him

the specifications of my old computer. "You should work in the Museum." Didn't get the joke when I told him that I had once.

But the wan smile disappeared when I explained what I needed the new unit to do. "What, you don't surf YouTube all day, you don't want to store and catalogue 5,000 High Definition videos or 10,000,000 songs, you don't have a MyFace page, you quit Second Life after 5 minutes and you've never heard of Doom [please insert modern version of on-line gaming here]".

Wouldn't have a clue.

So I turned to a Geek friend – "Just tell me what to buy" – and five minutes later – "I've found a good computer on-line, about 4 times better than yours, at a good price. Lot's of grunt, and should only be redundant in about 6 months. Buy that one."

Phew! Insert credit card number, press "Order Now" and sit back.

Sure is sleek – all black and silver with cool blue lights that flash every now and then. More USB ports that you can shake a stick at – even in the keyboard and the back of the screen - and the screen is bigger and flatter and more HD than my TV (guess I will have to learn how to download those HD "videos" that the guy was talking about). And a DVD thingo. And even a sound system (two little speakers and a subwoofer that makes a good foot rest – which actually sounds better than thing sitting on the so-called entertainment unit on the other side of the lounge room).

It's got 2.4 GHz of stuff, lots of FSB, and 3 GB of something else, and a large Czechoslovakian car with Native Command Queuing (I could make a joke about the Northern territory intervention, but think better of it). Its got ADVANCED HD Audio Software (must be better, 'cause it's in upper case), and free delivery.

[**Aside**: this all sounds a bit "Top Gear" but, like "Top Gear" – the new television show recommendation of the year now that "Iron Chef" has gone – it sounds funny, especially if you really have no idea what it all means.]

..... and it came with pre-loaded Genuine Windows Vista® Home Premium OEM Software – or as it came to be known – bloody Windows f@#$&^%g Vista (but more of that next time).

OK. Plug in all the power cords and connectors as per the instructions (I'm one of those people who read manuals). Turn on the power. Turn to head to the kitchen to make a cup of coffee ... beep .... all powered up and ready to go. Mmmmm! Looks like my coffee intake might be reduced significantly in the near future.

Fantastic! Now let's load all the software from the old computer and get to work.

To be continued .....

Tim Doeg

REPORTS FROM THE TRENCHES

FRESHWATER ECOLOGY, ARTHUR RYLAH INSTITUTE FOR ENVIRONMENTAL RESEARCH, DSE VICTORIA

Department of Sustainability and Environment

Phil Papas and **Shanaugh Lyon** (nee McKay) have been continuing work on the Victorian Index of Wetland Condition (IWC). By the end of June, the method will have been refined following the outcome of the testing that is currently underway. Phil will be organising a wetland mapping protocol workshop shortly to develop some guidelines for wetland mapping that is occurring across the state in some Catchment Management Authorities. Phil and Shanaugh are also working with **Changhao Jin** (also in Freshwater Ecology at ARI) to develop a wetland Catchment Disturbance Index - part of the National Land and Water Resources Audit National Wetland Indicators trials.

As part of a threatened species and fire project, **Di Crowther, Dave Bryant** and Shanaugh have spent just over a fortnight in the Victorian Alps and Mt Buffalo searching for species of conservation significance in fire-affected areas. As many people are aware the 'alpine fires' of 2002-03 burnt enormous tracts of land in 2002-03 and was followed by the 2006-07 Great Divide fires which burnt out extensive areas, including some areas already affected by the alpine fires. The surveys form part of a project investigating potential impacts of fires on threatened species. Success has come in finds of both nymphs and adults for two species of elusive alpine stoneflies, *Thaumatoperla alpina* (see photos) and *T. flaveola.* Speaking of threatened species, Di has been collaborating with a multitude of Victorian invertebrate taxonomists (terrestrial and aquatic) and the threatened species policy unit in Head Office updating the Victorian DSE Advisory List of Threatened Invertebrates. The list uses IUCN criteria to classify invertebrates according to their conservation significance. It is envisaged it will be published later this financial year.

Last spring Dave and Di were seen to be roaming the Barwon Catchment, collecting and live picking rapid bio-assessment samples for the Victorian EPA as part of the Southern Basins program (similar to the SRA). The second round of sampling is about to commence and no doubt many sites will be at very low flow or dry following a very hot and dry start to autumn.

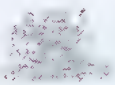
Congratulations to Shanaugh from the bug group and Jarod Lyon, a resident ARI fish ecologist, who wed late last year. While there's no 'baby bonus' imminent, they have acquired an extremely cute Jack Russell called Tucker who keeps them on their toes!

The bug group at Freshwater Ecology welcomes **Bronwyn Cumbo**. Bronwyn, originally from NSW has been gradually acclimatising to the southern Victorian climate and providing estuarine invertebrate expertise through the identification of Port Phillip Bay intertidal samples. Bronwyn has also been assisting with Index of Wetland Condition (IWC) database quality control, not to mention entering hundreds of IWC assessments.

Freshwater Ecology has bid farewell to **Alasdair Macdonald.** Al recently left ARI to pursue the world of freshwater in New Zealand hot on the heels of his partner Joanne. We wish Al (&Jo) all the best!

Phil Papas & Di Crowther

DEPARTMENT OF WATER AND ENERGY NSW



New South Wales Government
Department of Water and Energy

There have been many changes in water management and science around these parts (again) – we are now called Department of Water and Energy (nee Departments of Natural Resources, Infrastructure Planning and Natural Resources, Sustainable Natural Resources, Land and Water Conservation) and the scientists are within the Environmental Evaluation and Performance Branch (EEP). I'll try to summarise what work has been done since we last contributed to the Newsletter (probably years ago!).

The Department has four major environmental flows programs dealing with the (i) Regulated Rivers (ii) Unregulated Rivers (iii) Snowy Scheme and (iv) the metropolitan rivers of Sydney. See the web for details
http://www.naturalresources.nsw.gov.au/water/monitoring.shtml

Regulated Rivers -IMEF

Doug Westhorpe, **Simon Mitrovic** and **Bruce Chessman** have recently completed a report for the Integrated Monitoring of Environmental Flows (IMEF) program on wetting of terrestrial organic matter. The study looks at the relationships between dissolved organic carbon and food web linkages in relation to different flow scenarios.

Patrick Driver and the IMEF team have just undertaken a review of the program and are in a major reporting phase. Additional reports will soon be loaded on the updated IMEF web page.

Snowy Scheme

The Snowy River Flow Response Monitoring team is writing up a series of reports on the ecological responses to the first environmental flow regime to the river. **Andrew Brooks**, **Matthew Russell** and **Robyn Bevitt** have completed the report on the invertebrate response to environmental flows (or lack thereof!). A report on hydraulic modelling of a fish barrier at Pinch Falls has also been finished by **Tim Hauesler** and Robyn Bevitt. **Simon Williams** is currently editing the remaining reports on geomorphological changes by **Teresa Rose**, hydrology by **Simon Morton**, water quality by Robyn Bevitt, macro-algae **Adam Boey** and fish by Dean Gilligan (NSW DPI). As a free bonus report, a study on the impact of the 2003 bushfires on macroinvertebrates in the Snowy River catchment has been written by Matthew Russell. Teresa Rose is also completing the surface water hydraulic habitat mapping manual, while undertaking her PhD studies with Wayne Erskine. Simon Morton is also developing

Unregulated Rivers

A number of studies have been conducted by DWE staff relating to environmental flow rules for unregulated rivers. Bruce Chessman (who has recently moved to Dept Environment and Climate Change), **Monika Muschal** and **Meredith Royal** have published work investigating the effect of water abstraction on fish assemblages in unregulated streams of north-east NSW using a new predictive model approach. Following on from this research, Andrew, Bruce, Tim and Simon W. are applying this new method to assessing the impact of water abstraction on macroinvertebrates and fish. Andrew is also still investigating whether small-scale hydraulic variables are upper limiting factors constraining the spatial patterns of macroinvertebrate assemblages within riffles.

Ivars and Simon along with NSW DPI are developing a program to address movement of Eastern Freshwater Cod under different flows in the Richmond River catchment.

Tim Haeusler is undertaking a project to determine low flow requirements of unregulated rivers.

Metropolitan Rivers

Simon Williams, **Ivor Growns** and Ivars Reinfelds recently finished a stint on the Shoalhaven Scientific Advisory Panel developing environmental flows and water transfer rule for the Sydney drinking water supply system. DWE undertook a range of studies to assess the impacts of the Tallowa Dam and to evaluate flow options for the lower Shoalhaven River and estuary. These studies were presented at ASL in Queenstown and the River Symposium in Brisbane.

The studies included the integration of a major topographic survey with LIDAR and detailed infra-red photography. These spatial data were integrated in order to develop a series of hydraulic and hydrodynamic models from the dam to the estuary mouth. Tim Hauesler and Ivars have carried out detailed modelling of every major riffle in the Shoalhaven River to assess fish passage. Simon Williams has also completed a study on thermal stratification in several deep pools in the Shoalhaven River, and has investigated the relationship between flows and severity of stratification. Other physical processes were also modelled. Ivars Reinfelds in conjunction with DPI, have taken the project from a physical modelling project and is electronically tagging numerous Australian Bass and determining the flow rates that stimulate upstream passage by adult bass through the surveyed natural riffle/rapid barriers. This project now has the largest array of receivers of any river system in Australia and other fish species are now being assessed for future tagging.

Ivor Growns has been applying the final touches to a couple of papers, including the impacts of Tallowa dam on invertebrates, and a bioregional classifications of aquatic macrophytes, macroinvertebrates, freshwater fish and frogs using community-level modelling that related the assemblage structure with environmental variables.

Andrew Brooks

SCHOOL OF SCIENCE & ENGINEERING, THE UNIVERSITY OF BALLARAT.

The University of Ballarat resumes a limnological presence with the arrival of Peter Gell in February into the position of Environmental Science Prof and Head of the Centre for Environmental Management. He has transferred his Diatoma activities to UB and continues to work on lake paleolimnology. Following a contribution to the 2nd International Salinity forum in his old haunt Adelaide in late March he presented a keynote on identifying reference condition to the British Ecological ciety Symposium on the Ecology of Industrial Pollution, in another old haunt in Birmingham. Following several requests he is planning a diatom taxonomy short course around 19-20 July - expressions of interest to p.gell@ballarat.edu.au.

Peter Gell

LA TROBE UNIVERSITY AT ALBURY-WODONGA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT AND ECOLOGY

CERF Aquatic Macroinvertebrate Project

The CERF project component of the National Taxonomy Hub is underway at the Albury-Wodonga. **Dr Jeff Webb** from Purdue University has commenced his post- doc and is working with **Phil Suter** on the Australian Mayflies (of course). The project is using molecular and morphological characteristics to link nymphs and adults to facilitate more rapid associations and descriptions of new species. With **Steve Moore** our new technician we are collecting and associating species in the Baetidae, Caenidae, Coloburiscidae, Oniscigastridae, Ameletopsidae and Nesameletidae. Our aims are to describe new taxa as identified by molecular and morphological characteristics, produce interactive keys available on the web and to investigate the phylogeny of these groups. In addition, **John Hawking** has commenced his PhD on Australian aquatic moths and is part of the CERF project. He is heading all over the country attempting to collect adults and larvae and seems to be enjoying himself even when collecting lots of Caenid adults. Information on the project and the National Taxonomy Hub can be obtained at http://www.taxonomy.org.au/ and www.latrobe.edu.au/deme/aw

Any budding aquatic insect taxonomists interested at honours or post graduate level interested in joining the CERF group at La Trobe University at Albury-Wodonga can contact Phil Suter at p.suter@latrobe.edu.au .

See also the preliminary announcement for the rebirth of the Taxonomic Workshops in this issue.

Phil Suter

CHARLES DARWIN UNIVERSITY

Michael Douglas now has some people to work in rivers with him as part of the Darwin contingent of TRaCK – the Tropical Rivers and Coastal Knowledge research hub for you temperates. Theme 4 of TRaCK is exploring hydrology, geomorphology, hydraulics, water quality and primary production and is well under way under the erstwhile guidance of Jon Olley, while Theme 5 is exploring food webs of all sorts (rivers, waterholes, floodplains, estuaries) under the guidance of Dougo, **Stuart Bunn** and **Peter Davies**. And now they've got some helpers. **Rose Jubber** joined CDU last year to wield her finesse with finances, as did **Andrew Buick** who's on communications detail and heading up the Knowledge and Adoption Theme in TRaCK. Andrew is also joined by **Kate Andrews**, previously of LWA in Canberra and facilitator-extraordinaire. **Dominica Loong** has moved from James Cook University to join **Ian Dixon**, who's moved from the CRC for Tropical Savannas, to provide invaluable and intrepid field assistance. **Dan Warfe** has moved up from Tas to work on river food webs and flows, and has just been joined by **Simon Townsend** (no, not that one) from NRETA who'll continue his work with Dougo on primary production and flows.

In March CDU hosted a workshop for the Theme 5 players including all of the above plus **Brad Pusey, Mark Kennard, Tim Jardine, Michele Burford and Dominic Valdez (Griffith Uni), Peter Bayliss (eriss), Neil Pettit (UWA) and Marcus Finn (CSIRO)** to refine the program for the food webs work. Together with the Griffith Uni and UWA mobs, we'll be kicking off a monumental stable isotopes survey across the Mitchell, Fitzroy and Daly River catchments starting in May, and probably taking up most of the June and July as well, to get a picture of aquatic food web structure across the tropics during the early dry season. And then we go and do it all again just before the wet. Much of the planning for this seems to involve how to avoid becoming part of the food web (i.e. croc-food).

But it won't all be stable isotopes this year. **Andrew Raith** will be lugging batteries back into Litchfield National Park to conduct electrical-exclusion experiments to look at top-down control and its effects on benthic metabolism. Andrew and Kate are busy organising the TRaCK extravaganza, sorry consortium meeting, in April which will bring together almost all the 70 TRaCK researchers from across Australia. After which the CDU will team will be heading into the Daly River catchment to present some of the findings from the fish-flows project conducted by **Brad Pusey, Mark Kennard, Sue Jackson** (CSIRO) and Dougo over the last two years.

There's plenty more going on, but we wouldn't want to use it all up in the first installment.

Dan Warfe
Michael Douglas

AQUATIC ECOSYSTEMS UNIT, DEPARTMENT OF NATURAL RESOURCES AND WATER LONG POCKET LABORATORIES, INDOOROOPILLY, QUEENSLAND

2008 has started off with a bang - we now have ISO 9001:2000 certification for our Quality Management System! Thanks to all staff involved. Ongoing work to maintain and improve our business and science activities through the system will continue.

The 12th bi-annual Freshwater EHMP assessments of south east Queensland streams is underway; with long-term staff **David Moffatt**, **Skye Cameron**, **Stephen Moore** and **Jessica Pettitt** currently training 8 new recruits. The team of 12 will drive a combined total of about 40,000 km over the next 2 months collecting data and samples to quantify 18 ecological indices at 135 sites. Details of the project are available at www.ehmp.org

Our old bread-and-butter project, ABMAP (Ambient Biological Monitoring and Assessment Program), is coming to an end, with 2007 being the last sampling round before SEAP (Stream and Estuary Assessment Program), its replacement, is implemented. The 2007 ABMAP samples have all been processed now, and the draft report has been written and is undergoing review. **Alisha Steward** now has the "fun" task of processing 20-odd macroinvertebrate field residues for QA/QC purposes... yes, I did say fun... and hours of it...

Pete Negus, **Louisa Davis** and **Jo Blessing** from the Stream and Estuary Assessment Program (SEAP) have undertaken a qualitative risk assessment on riverine ecosystem health in the Wet Tropics. There is an upcoming round of fieldwork for the program in the Central Freshwater Bioprovince which we are busily trying to organise. Just a note there that we probably won't have any trouble finding sampling sites for indicators that require the presence of water due to the recent rain in the area!

The Qld FARWH Trials Project kicked off late last year, and the team (**Diane Conrick**, **Dean Holloway** and **Bill Senior**) have been working hard on writing the Inception Report (detailed guidelines for the project) and preparing for 2 ½ months of field work, commencing late April. The project will trial the FARWH against 4 Queensland monitoring programs over the next 2 years before reporting to the NWC on Queensland's capability to report using the national reporting framework. The project will trial monitoring programs in Central and South-east Queensland in 2008 and the Wet Tropics and Lake Eyre Basin in 2009.

Jason Dunlop has been heading up a review of the effects of pesticides on Great Barrier Reef Catchments as part of NRW's responsibilities under the Reef Plan. A monitoring options paper will soon be released to stakeholders as part of the monitoring program design phase.

Keep on bugging...

Alisha Steward

ECOSYSTEM MANAGEMENT, UNIVERSITY OF NEW ENGLAND

Aquatic research continues to hum along in Ecosystem Management, University of New England. **Caitlin Johns** is studying plant communities of Clarence River floodplain wetlands which have been affected by the presence of drains and tidal barriers. Her thesis is now near completion, containing new information on the salt tolerance of some key coastal wetland plant species, a new general model developed for predicting the effects of tidal restoration on mixohaline wetland plant communities, and an evaluation of likely effects of tidal restoration on the species composition of Clarence wetland plant communities. **Andrew Boulton** is now settled in Fremantle, conducting a sporadic and poorly-designed sampling program of recreational fish stocks near Perth while editing papers for MFR, reading drafts of theses, and contemplating writing up some long over-due papers.

As a consequence of aging juvenile Australian smelt to develop associations between fish spawning period with river temperature and flow events, **Rob Rolls** is keeping the local optometrists in business as he has now gone severely cross-eyed. When he is able to bare the sight of a glowing computer screen, Rob will continue preparing his thesis examining flow regime and the ecological needs of native fish in tributaries of the Hunter River, NSW. Robs' study sites experience regular rainfall, and regulated tributaries still flood frequently. Natural low flows appear to be of considerable influence of small fish assemblages, and these natural low flow (or cease-to-flow) events have been eliminated in regulated tributaries.

On the tablelands, **Sarah Mika** has begun her new position as Research Officer in a project with **Darren Ryder** to assess the ecological success of stream restoration in rural towns, where the impacts of rural and urban inputs create a unique set of issues for restoration. To the west of the divide, **Debbie Burgis** begins her fieldwork collecting biogeochemical data for an eco-hydraulic model that aims to link instream habitat inundation river processes in the Gwydir River. **Peter Berney** has headed further west (out past Moree) to examine the effects of inundation and grazing on floodplain vegetation after an environmental flow release to the Gwydir marshes. **Rob Veal** is in the final throws of his Masters project examining the impact of changes in flow management on macroinvertebrates in the regulated Nymboida River.

Rob Rolls and Darren Ryder

MONASH FRESHWATER ECOLOGY RESEARCH LABORATORY, SCHOOL OF BIOLOGICAL SCIENCES

Wow, its been a busy time, both at Monash and everywhere else by the look of things.

In the lab, **Amber Clarke** (working with Ralph Mac Nally, Sam Lake and Nick Bond) has recently completed another season in the field (much of which was a desperate search for any water at all) and is hard at work id'ing the more obscure inhabitants of first order streams. **Beth Wallis** (Sam Lake) is completing the processing of the samples from her stream confluence work) along with **Karen Cooper** (Sam Lake, Ralph Mac Nally and Gerry Quinn,(working on her ISC study) and **Elise King** (Ross Thompson, Sam Lake

and Paul Reich) (community dynamics of intermittent ponds). They are joined by **Susie Ho** (Nick Bond and Ross Thompson) who is processing her samples from Ovens floodplain pools where she has been investigating food web consequences of *Gambusia*. Out in the field **John Morringiello** (Nick Bond, Dave Crook and Bob Wong) has had some interesting results arise in his study of the life history traits of carp gudgeon. **Mardiana Ali** (Ross Thompson and Mike Grace) has completed her first samplings of lowland streams in central Victoria where she has found some strong effects of *Typha* on nutrient dynamics and food web structure. **Sam Imberger** (Ross Thompson and Mike Grace) is continuing her work on functional indicators in urban streams and is joined by Honours student **Erinn Richmond**. Recently finished their Honours projects are **Huon Clark** (life history traits of carp gudgeon – Nick Bond and Bob Wong). **Alissa Monk** (marine ecotoxiology – Ross Thompson), **James Douglas** (trout-galaxiid interactions – Ross Thompson) and **Fiona Melvin** (climate change biology – Ross Thompson and Paul Sunnucks). **Darren Giling** has joined the group to study yabby trophic biology in lowland streams, co-supervised by myself and Paul Reich. **Gisselle Perdomo** has also arrived from Venezuela to work with myself and Paul Sunnucks on climate change and fragmentation. Our major projects continue to proceed apace, with **Nick Bond's** work for eWater keeping him busy in the field, and **Elisa Rawlings** and **Kay Morris** starting to get some data on our wetlands restoration project. **Paul Reich**, ably assisted by **Matt Johnson** and **Thomas Daniel** is continuing to collect data on the large scale riparian restoration project funded by MDBC – with the data really starting to flow now. **Damien McMaster** together with Paul, Sam and Nick continue to work on the Broken-Boosey system.

Ross Thompson

RMIT UNIVERSITY

Much is happening in the Ecotox lab at RMIT University. Here is a brief sample. **Ben Kefford** is working on the combined effect of suspended sediments and salinity on freshwater macroinvertebrates. Ben and **Richard Marchant** (Museum of Victoria) have been on the sub-Antarctic island, Macquarie Island, sampling the stream invertebrate communities that Richard sampled 15 years ago and measuring whole stream metabolism.

Dayanthi Nugegoda is working with the DPI to develop methods to assess the toxicity of recycled water. **Tarah Hagen** an Honours student supervised by Dayanthi and the DPI successfully developed a freshwater rotifer test as part of this methodology and graduated with a First Class Honours.

Kasturi Reddy-Lopata, Ben and Dayanthi have been developing methods to detect sub-lethal salinity stress in freshwater macroinvertebrates in the field. Renee Dowse has commenced a master's research project, supervised by **Ben and Tally Palmer** (University of Technology Sydney), investigating how water temperature and temporally fluctuating salinity alters the effect of salinity on freshwater macroinvertebrates.

Kavitha Chintathamby has been measuring sex hormones in freshwater fish collected around Melbourne to investigate endocrine disrupting chemicals on a PhD project supervised by Dayanthi and **Vin Pettigrove** (Melbourne Water).

We will soon be joined by **Ralf Schäfer** from Germany to commence a post-doc developing a SPEAR (SPEcies At Risk) index from salinity and agricultural pesticides.

Ben J. Kefford

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